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(54) Title: ALKYNE DERIVATIVES AS TRACERS FOR METABOTROPIC GLUTAMATE RECEPTOR BINDING

(57) Abstract: The present invention is directed to isotopically labeled alkyne derivative compounds, particularly ¹¹C, ¹³C, ¹⁴C, ¹⁸F, ¹⁵O, ¹³N, ³⁵S, ²H, and ³H labeled compounds. In particular, the present invention is directed to ¹¹C, ¹³C, ¹⁴C, ¹⁸F, ¹⁵O, ¹³N, ³⁵S, ²H, and ³H labeled heterocyclic alkynes and methods of their preparation. The present invention further includes a method of use of the ¹¹C, ¹⁸F, ¹⁵O, or ¹³N labeled heterocyclic alkyne compounds as tracers in positron emission tomography (PET) imaging, particularly in the study of metabolic conditions in mammals, specifically conditions modulated by metabotropic glutamate receptors subtype 5 (mGluR5).

WO 2004/038374 A2